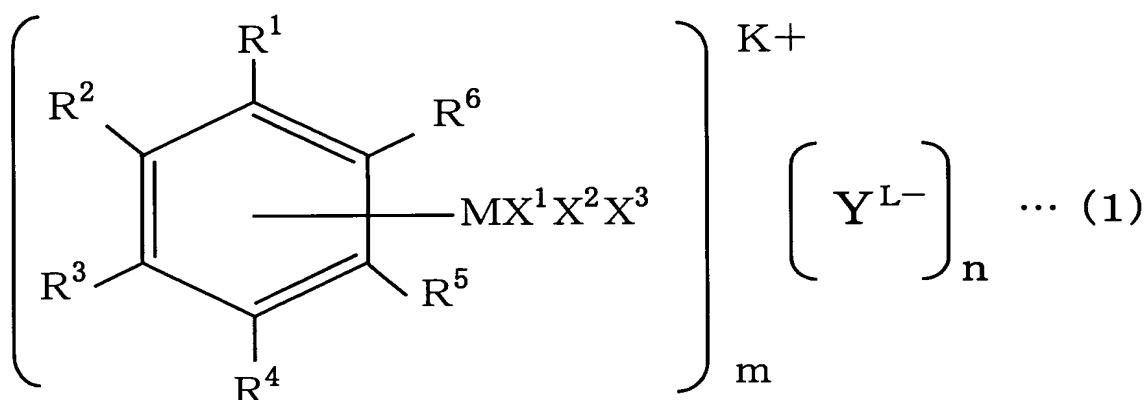


AMENDMENTS TO THE CLAIMS

The following is a complete, marked up listing of revised claims with a status identifier in parentheses, underlined text indicating insertions, and strikethrough and/or double brackets indicating deletions.

Listing of the Claims

1. (CURRENTLY AMENDED) A reducing process of carbon dioxide, comprising mixing carbon dioxide and water with an organometallic complex represented by general formula (1) so as to reduce carbon dioxide so that formic acid or alkali salt thereof is formed.



where R¹, R², R³, R⁴, R⁵, and R⁶ independently represent a hydrogen atom or a lower alkyl group, M represents an element that can be coordinated to the benzene ring, X¹ and X² represent nitrogen-containing ligands, X³ represents a hydrogen atom, a carboxylic acid residue, or H₂O, X¹ and X² may be bonded to each other, Y represents an anion species, K represents a valency of a cation species, L represents a valency of an anion species, K and L independently represent 1 or 2, and K, m, L, and n are related to one another by K x m = L x n.

2. (ORIGINAL) A reducing process of carbon dioxide as set forth in Claim 1, wherein, in the organometallic complex represented by general formula (1), M represents a group 8 element or a group 9 element of the periodic table.

3. (ORIGINAL) A reducing process of carbon dioxide as set forth in Claim 2, wherein in the organometallic complex represented by general formula (1), M is Ru.

4. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 1, wherein, in the organometallic complex represented by general formula (1), Y is one of a formate ion, a halide ion, a triflate ion, a sulfate ion, a perhalogen acid ion, a tetrafluoroborate ion, a hexafluorophosphoric acid ion, and a thiocyanate ion.

5. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth Claim 1, wherein, in the organometallic complex represented by general formula (1), the nitrogen-containing ligands represented by X¹ and X² are 4,4'-dimethoxy-2,2'-bipyridine.

6. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 1, wherein a pH of a reaction system mixing the organometallic complex, carbon dioxide, and water is 6 or below.

7. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 1, wherein, when reducing the carbon dioxide by mixing the organometallic complex, carbon dioxide, and water, the pH of the reaction system is changed.

8. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 5, comprising the steps of:

adding hydrogen to a reaction system mixing the organometallic complex of general formula (1), carbon dioxide, and water, where the nitrogen-containing ligands represented by X^1 and X^2 are 4,4'-dimethoxy-2,2'-bipyridine; and

applying a pressure on the reaction system.

9. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 2, wherein, in the organometallic complex represented by general formula (1), Y is one of a formate ion, a halide ion, a triflate ion, a sulfate ion, a perhalogen acid ion, a tetrafluoroborate ion, a hexafluorophosphoric acid ion, and a thiocyanate ion.

10. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 3, wherein, in the organometallic complex represented by general formula (1), Y is one of a formate ion, a halide ion, a triflate ion, a sulfate ion, a perhalogen acid ion, a tetrafluoroborate ion, a hexafluorophosphoric acid ion, and a thiocyanate ion.

11. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 2, wherein, in the organometallic complex represented by general formula (1), the nitrogen-containing ligands represented by X^1 and X^2 are 4,4'-dimethoxy-2,2'-bipyridine.

12. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 3, wherein, in the organometallic complex represented by general formula (1), the nitrogen-containing ligands represented by X^1 and X^2 are 4,4'-dimethoxy-2,2'-bipyridine.

13. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 4, wherein, in the organometallic complex represented by general formula (1), the nitrogen-containing ligands represented by X^1 and X^2 are 4,4'-dimethoxy-2,2'-bipyridine.

14. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 2, wherein a pH of a reaction system mixing the organometallic complex, carbon dioxide, and water is 6 or below.

15. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 3, wherein a pH of a reaction system mixing the organometallic complex, carbon dioxide, and water is 6 or below.

16. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 4, wherein a pH of a reaction system mixing the organometallic complex, carbon dioxide, and water is 6 or below.

17. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 5, wherein a pH of a reaction system mixing the organometallic complex, carbon dioxide, and water is 6 or below.

18. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 2, wherein, when reducing the carbon dioxide by mixing the organometallic complex, carbon dioxide, and water, the pH of the reaction system is changed.

19. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 3, wherein, when reducing the carbon dioxide by mixing the organometallic complex, carbon dioxide, and water, the pH of the reaction system is changed.

20. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 4, wherein, when reducing the carbon dioxide by mixing the organometallic complex, carbon dioxide, and water, the pH of the reaction system is changed.

21. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 5, wherein, when reducing the carbon dioxide by mixing the organometallic complex, carbon dioxide, and water, the pH of the reaction system is changed.

22. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 6, wherein, when reducing the carbon dioxide by mixing the organometallic complex, carbon dioxide, and water, the pH of the reaction system is changed.

23. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 6, comprising the steps of:

adding hydrogen to a reaction system mixing the organometallic complex of general formula (1), carbon dioxide, and water, where the nitrogen-containing ligands represented by X^1 and X^2 are 4,4'-dimethoxy-2,2'-bipyridine; and

applying a pressure on the reaction system.

24. (PREVIOUSLY PRESENTED) A reducing process of carbon dioxide as set forth in Claim 7, comprising the steps of:

adding hydrogen to a reaction system mixing the organometallic complex of general formula (1), carbon dioxide, and water, where the nitrogen-containing ligands represented by X^1 and X^2 are 4,4'-dimethoxy-2,2'-bipyridine; and

applying a pressure on the reaction system.